SEQUENCE LISTING

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Vollmers, Heinz Peter
Hensel, Frank

<120> Neoplasm-Specific Polypeptides and Their Uses

<130> 50308/009002

<140> 10/764,730
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<150> DE 10210425.5
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<151> 2001-07-24

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Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Tyr Ile Asn Trp
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gtg aag cag agg act gga cag ggc ctt gag tgg att gga gag att tat   96
Val Lys Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr
            20                  25                  30

cct gga agt ggt aat act tac tac aat gag aag ttc aag ggc aag gcc   144
Pro Gly Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala
        35                  40                  45

aca ctg act gca gac aaa tcc tcc agc aca gcc tac atg cag ctc agc   192
Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser
    50                  55                  60

agc ctg aca tct gag gac tct gca gtc tat ttc tgt gca aga tcg gga   240
Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys Ala Arg Ser Gly
65                  70                  75                  80
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tta cga ccc tat gct atg gac tac tgg ggt caa gga acc tca gtc acc   288
Leu Arg Pro Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr
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Val Lys Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr
            20                  25                  30
Pro Gly Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala
        35                  40                  45
Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser
    50                  55                  60
Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys Ala Arg Ser Gly
65                  70                  75                  80
Leu Arg Pro Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr
                85                  90                  95
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Pro Leu Ser Leu Pro Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys
 1               5                  10                  15

aga tct agt cag agc att gta cat agt aat gga aac acc tat tta gaa   96
Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
            20                  25                  30

tgg tac ctg cag aaa cca ggc cag tct cca aag ctc ctg atc tac aaa   144
Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
        35                  40                  45

gtt tcc aac cga ttt tct ggg gtc cca gac agg ttc agt ggc agt gga   192
Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
    50                  55                  60

tca ggg aca gat ttc aca ctc aag atc agc aga gtg gag gct gag gat   240
Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
65                  70                  75                  80

ctg gga gtt tat tac tgc ttt caa ggt tca cat gtt ccg tac acg ttc   288
Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe
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                85                  90                  95

gga ggg ggg acc aag ctg gaa ata aaa                                  315
Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105


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Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
            20                  25                  30
Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys
        35                  40                  45
Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly
    50                  55                  60
Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp
65                  70                  75                  80
Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe
                85                  90                  95
Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105


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Asp Val Arg Glu Pro Glu Asn Glu Ile Ser Ser Asp Cys Asn His Leu
 1               5                  10                  15

ttg tgg aat tat aag ctg aac cta act aca gat ccc aaa ttt gaa tct   96
Leu Trp Asn Tyr Lys Leu Asn Leu Thr Thr Asp Pro Lys Phe Glu Ser
            20                  25                  30

gtg gcc aga gag gtt tgc aaa tct act ata aca gag att gaa gaa tgt   144
Val Ala Arg Glu Val Cys Lys Ser Thr Ile Thr Glu Ile Glu Glu Cys
        35                  40                  45

gct gat gaa ccg gtt gga aaa ggt tac atg gtt tcc tgc ttg gtg gat   192
Ala Asp Glu Pro Val Gly Lys Gly Tyr Met Val Ser Cys Leu Val Asp
    50                  55                  60

cac cga ggc aac atc act gag tat cag tgt cac cag tac att acc aag   240
His Arg Gly Asn Ile Thr Glu Tyr Gln Cys His Gln Tyr Ile Thr Lys
65                  70                  75                  80
```

```
atg acg gcc atc att ttt agt gat tac cgt tta atc tgt ggc ttc atg   288
Met Thr Ala Ile Ile Phe Ser Asp Tyr Arg Leu Ile Cys Gly Phe Met
                 85                  90                  95

gat gac tgc aaa aat gac atc aac att ctg aaa tgt ggc agt att cgg   336
Asp Asp Cys Lys Asn Asp Ile Asn Ile Leu Lys Cys Gly Ser Ile Arg
            100                 105                 110

ctt gga gaa aag gat gca cat tca caa ggt gag gtg gta tca tgc ttg   384
Leu Gly Glu Lys Asp Ala His Ser Gln Gly Glu Val Val Ser Cys Leu
        115                 120                 125

gag aaa ggc ctg gtg aaa gaa gca gaa gaa aga gaa ccc aag att caa   432
Glu Lys Gly Leu Val Lys Glu Ala Glu Glu Arg Glu Pro Lys Ile Gln
    130                 135                 140

gtt tct gaa ctc tgc aag aaa gcc att ctc cgg gtg gct gag ctg tca   480
Val Ser Glu Leu Cys Lys Lys Ala Ile Leu Arg Val Ala Glu Leu Ser
145                 150                 155                 160

tcg gat gac ttt cac tta gac cgg cat tta tat ttt gct tgc cga gat   528
Ser Asp Asp Phe His Leu Asp Arg His Leu Tyr Phe Ala Cys Arg Asp
                165                 170                 175

gat cgg gag cgt ttt tgt gaa aat aca caa gct ggt gag ggc aga gtg   576
Asp Arg Glu Arg Phe Cys Glu Asn Thr Gln Ala Gly Glu Gly Arg Val
            180                 185                 190

tat aag tgc ctc ttt aac cat aaa ttt gaa gaa tcc atg agt gaa aag   624
Tyr Lys Cys Leu Phe Asn His Lys Phe Glu Glu Ser Met Ser Glu Lys
        195                 200                 205

tgt cga gaa gca ctt aca acc cgc caa aag ctg att gcc cag gat tat   672
Cys Arg Glu Ala Leu Thr Thr Arg Gln Lys Leu Ile Ala Gln Asp Tyr
    210                 215                 220

aaa gtc agt tat tca ttg gcc aaa tcc tgt aaa agt gac ttg aag aaa   720
Lys Val Ser Tyr Ser Leu Ala Lys Ser Cys Lys Ser Asp Leu Lys Lys
225                 230                 235                 240

tac cgg tgc aat gtg gaa aac ctt ccg cga tcg cgt gaa gcc agg ctc   768
Tyr Arg Cys Asn Val Glu Asn Leu Pro Arg Ser Arg Glu Ala Arg Leu
                245                 250                 255

tcc tac ttg tta atg tgc ctg gag tca gct gta cac aga ggg cga caa   816
Ser Tyr Leu Leu Met Cys Leu Glu Ser Ala Val His Arg Gly Arg Gln
            260                 265                 270

gtc agc agt gag tgc cag ggg gag atg ctg gat tac cga cgc atg ttg   864
Val Ser Ser Glu Cys Gln Gly Glu Met Leu Asp Tyr Arg Arg Met Leu
        275                 280                 285

atg gaa gac ttt tct ctg agc cct gag atc atc cta agc tgt cgg ggg   912
Met Glu Asp Phe Ser Leu Ser Pro Glu Ile Ile Leu Ser Cys Arg Gly
    290                 295                 300

gag att gaa cac cat tgt tcc gga tta cat cga aaa ggg cgg acc cta   960
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```
Glu Ile Glu His His Cys Ser Gly Leu His Arg Lys Gly Arg Thr Leu
305                 310                 315                 320

cac tgt ctg atg aaa gta gtt cga ggg gag aag ggg aac ctt gga atg   1008
His Cys Leu Met Lys Val Val Arg Gly Glu Lys Gly Asn Leu Gly Met
                325                 330                 335

aac tgc cag cag gcg ctt caa aca ctg att cag gag act gac cct ggt   1056
Asn Cys Gln Gln Ala Leu Gln Thr Leu Ile Gln Glu Thr Asp Pro Gly
            340                 345                 350

gca gat tac cgc att gat cga gct ttg aat gaa gct tgt gaa tct gta   1104
Ala Asp Tyr Arg Ile Asp Arg Ala Leu Asn Glu Ala Cys Glu Ser Val
        355                 360                 365

atc cag aca gcc tgc aaa cat ata aga tct gga gac cca atg atc ttg   1152
Ile Gln Thr Ala Cys Lys His Ile Arg Ser Gly Asp Pro Met Ile Leu
    370                 375                 380

tcg tgc ctg atg gaa cat tta tac aca gag aag atg gta gaa gac tgt   1200
Ser Cys Leu Met Glu His Leu Tyr Thr Glu Lys Met Val Glu Asp Cys
385                 390                 395                 400

gaa cac cgt ctc tta gag ctg cag tat ttc atc tcc cgg gat tgg aag   1248
Glu His Arg Leu Leu Glu Leu Gln Tyr Phe Ile Ser Arg Asp Trp Lys
                405                 410                 415

ctg gac cct gtc ctg tac cgc aag tgc cag gga gac gct tct cgt ctt   1296
Leu Asp Pro Val Leu Tyr Arg Lys Cys Gln Gly Asp Ala Ser Arg Leu
            420                 425                 430

tgc cac acc cac ggt tgg aat gag acc agc gaa ttt atg cct cag gga   1344
Cys His Thr His Gly Trp Asn Glu Thr Ser Glu Phe Met Pro Gln Gly
        435                 440                 445

gct gtg ttc tct tgt tta tac aga cac gcc tac cgc act gag gaa cag   1392
Ala Val Phe Ser Cys Leu Tyr Arg His Ala Tyr Arg Thr Glu Glu Gln
    450                 455                 460

gga agg agg ctc tca cgg gag tgc cga gct gaa gtc caa agg atc cta   1440
Gly Arg Arg Leu Ser Arg Glu Cys Arg Ala Glu Val Gln Arg Ile Leu
465                 470                 475                 480

cac cag cgt gcc atg gat gtc aag ctg gat cct gcc ctc cag gat aag   1488
His Gln Arg Ala Met Asp Val Lys Leu Asp Pro Ala Leu Gln Asp Lys
                485                 490                 495

tgc ctg att gat ctg gga aaa tgg tgc agt gag aaa aca gag act gga   1536
Cys Leu Ile Asp Leu Gly Lys Trp Cys Ser Glu Lys Thr Glu Thr Gly
            500                 505                 510

cag aag ctg gag tgc ctt cag gac cat ctg gat gac tta gtg gtg gag   1584
Gln Lys Leu Glu Cys Leu Gln Asp His Leu Asp Asp Leu Val Val Glu
        515                 520                 525

tgt aga gat ata gtt ggc aac ctc act gag tta gaa tca gag gat att   1632
Cys Arg Asp Ile Val Gly Asn Leu Thr Glu Leu Glu Ser Glu Asp Ile
    530                 535                 540
```

```
caa ata gaa gcc ttg ctg atg aga gcc tgt gag ccc ata att cag aac   1680
Gln Ile Glu Ala Leu Leu Met Arg Ala Cys Glu Pro Ile Ile Gln Asn
545                 550                 555                 560

ttc tgc cac gat gtg gca gat aac cag ata gac tcc ggg gac ctg atg   1728
Phe Cys His Asp Val Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met
                565                 570                 575

gag tgt ctg ata cag aac aaa cac cag aag gac atg aac gag aag tgt   1776
Glu Cys Leu Ile Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys
            580                 585                 590

gcc atc gga gtt acc cac ttc cag ctg gtg cag atg aag gat ttt cgg   1824
Ala Ile Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg
        595                 600                 605

ttt tct tac aag ttt aaa atg gcc tgc aag gag gac gtg ttg aag ctt   1872
Phe Ser Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu
    610                 615                 620

tgc cca aac ata aaa aag aag gtg gac gtg gtg atc tgc ctg agc acg   1920
Cys Pro Asn Ile Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr
625                 630                 635                 640

acc gtg cgc aat gac act ctg cag gaa gcc aag gag cac agg gtg tcc   1968
Thr Val Arg Asn Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser
                645                 650                 655

ctg aag tgc cgc agg cag ctc cgt gtg gag gag ctg gag atg acg gag   2016
Leu Lys Cys Arg Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu
            660                 665                 670

gac atc cgc ttg gag cca gat cta tac gaa gcc tgc aag agt gac atc   2064
Asp Ile Arg Leu Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile
        675                 680                 685

aaa aac ttc tgt tcc gct gtg caa tat ggc aac gct cag att atc gaa   2112
Lys Asn Phe Cys Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu
    690                 695                 700

tgt ctg aaa gaa aac aag aag cag cta agc acc cgc tgc cac caa aaa   2160
Cys Leu Lys Glu Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys
705                 710                 715                 720

gta ttt aag ctg cag gag aca gag atg atg gac cca gag cta gac tac   2208
Val Phe Lys Leu Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr
                725                 730                 735

acc ctc atg agg gtc tgc aag cag atg ata aag aag ttc tgt ccg gaa   2256
Thr Leu Met Arg Val Cys Lys Gln Met Ile Lys Lys Phe Cys Pro Glu
            740                 745                 750

gca gat tct aaa acc atg ttg cag tgc ttg aag caa aat aaa aac agt   2304
Ala Asp Ser Lys Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser
        755                 760                 765

gaa ttg atg gat ccc aaa tgc aaa cag atg ata acc aag cgc cag atc   2352
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Glu Leu Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile
    770                 775                 780

acc cag aac aca gat tac cgc tta aac ccc atg tta aga aaa gcc tgt   2400
Thr Gln Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys
785                 790                 795                 800

aaa gct gac att cct aaa ttc tgt cac ggt atc ctg act aag gcc aag   2448
Lys Ala Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys
                805                 810                 815

gat gat tca gaa tta gaa gga caa gtc atc tct tgc ctg aag ctg aga   2496
Asp Asp Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg
            820                 825                 830

tat gct gac cag cgc ctg tct tca gac tgt gaa gac cag atc cga atc   2544
Tyr Ala Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile
        835                 840                 845

att atc cag gag tcc gcc ctg gac tac cgc ctg gat cct cag ctc cag   2592
Ile Ile Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln
    850                 855                 860

ctg cac tgc tca gac gag atc tcc agt cta tgt gct gaa gaa gca gca   2640
Leu His Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala
865                 870                 875                 880

gcc caa gag cag aca ggt cag gtg gag gag tgc ctc aag gtc aac ctg   2688
Ala Gln Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu
                885                 890                 895

ctc aag atc aaa aca gaa ttg tgt aaa aag gaa gtg cta aac atg ctg   2736
Leu Lys Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu
            900                 905                 910

aag gaa agc aaa gca gac atc ttt gtt gac ccg gta ctt cat act gct   2784
Lys Glu Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala
        915                 920                 925

tgt gcc ctg gac att aaa cac cac tgc gca gcc atc acc cct ggc cgc   2832
Cys Ala Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg
    930                 935                 940

ggg cgt caa atg tcc tgt ctc atg gaa gca ctg gag gat aag cgg gtg   2880
Gly Arg Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val
945                 950                 955                 960

agg tta cag ccc gag tgc aaa aag cgc ctc aat gac cgg att gag atg   2928
Arg Leu Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met
                965                 970                 975

tgg agt tac gca gca aag gtg gcc cca gca gat ggc ttc tct gat ctt   2976
Trp Ser Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu
            980                 985                 990

gcc atg caa gta atg acg tct cca tct aag aac tac att ctc tct gtg   3024
Ala Met Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val
        995                 1000                1005
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```
atc agt ggg agc atc tgt ata ttg ttc ctg att ggc ctg atg tgt gga   3072
Ile Ser Gly Ser Ile Cys Ile Leu Phe Leu Ile Gly Leu Met Cys Gly
    1010                1015                1020

cgg atc acc aag cga gtg aca cga gag ctc aag gac agg tag           3114
Arg Ile Thr Lys Arg Val Thr Arg Glu Leu Lys Asp Arg  *
1025                1030                1035
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<210> 6
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<212> PRT
<213> Homo sapiens

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            20                  25                  30
Val Ala Arg Glu Val Cys Lys Ser Thr Ile Thr Glu Ile Glu Glu Cys
        35                  40                  45
Ala Asp Glu Pro Val Gly Lys Gly Tyr Met Val Ser Cys Leu Val Asp
    50                  55                  60
His Arg Gly Asn Ile Thr Glu Tyr Gln Cys His Gln Tyr Ile Thr Lys
65                  70                  75                  80
Met Thr Ala Ile Ile Phe Ser Asp Tyr Arg Leu Ile Cys Gly Phe Met
                85                  90                  95
Asp Asp Cys Lys Asn Asp Ile Asn Ile Leu Lys Cys Gly Ser Ile Arg
            100                 105                 110
Leu Gly Glu Lys Asp Ala His Ser Gln Gly Glu Val Val Ser Cys Leu
        115                 120                 125
Glu Lys Gly Leu Val Lys Glu Ala Glu Glu Arg Glu Pro Lys Ile Gln
    130                 135                 140
Val Ser Glu Leu Cys Lys Lys Ala Ile Leu Arg Val Ala Glu Leu Ser
145                 150                 155                 160
Ser Asp Asp Phe His Leu Asp Arg His Leu Tyr Phe Ala Cys Arg Asp
                165                 170                 175
Asp Arg Glu Arg Phe Cys Glu Asn Thr Gln Ala Gly Glu Gly Arg Val
            180                 185                 190
Tyr Lys Cys Leu Phe Asn His Lys Phe Glu Glu Ser Met Ser Glu Lys
        195                 200                 205
Cys Arg Glu Ala Leu Thr Thr Arg Gln Lys Leu Ile Ala Gln Asp Tyr
    210                 215                 220
Lys Val Ser Tyr Ser Leu Ala Lys Ser Cys Lys Ser Asp Leu Lys Lys
225                 230                 235                 240
Tyr Arg Cys Asn Val Glu Asn Leu Pro Arg Ser Arg Glu Ala Arg Leu
                245                 250                 255
Ser Tyr Leu Leu Met Cys Leu Glu Ser Ala Val His Arg Gly Arg Gln
            260                 265                 270
Val Ser Ser Glu Cys Gln Gly Glu Met Leu Asp Tyr Arg Arg Met Leu
        275                 280                 285
Met Glu Asp Phe Ser Leu Ser Pro Glu Ile Ile Leu Ser Cys Arg Gly
    290                 295                 300
Glu Ile Glu His His Cys Ser Gly Leu His Arg Lys Gly Arg Thr Leu
305                 310                 315                 320
His Cys Leu Met Lys Val Val Arg Gly Glu Lys Gly Asn Leu Gly Met
```

```
                325                 330                 335
Asn Cys Gln Gln Ala Leu Gln Thr Leu Ile Gln Glu Thr Asp Pro Gly
            340                 345                 350
Ala Asp Tyr Arg Ile Asp Arg Ala Leu Asn Glu Ala Cys Glu Ser Val
        355                 360                 365
Ile Gln Thr Ala Cys Lys His Ile Arg Ser Gly Asp Pro Met Ile Leu
    370                 375                 380
Ser Cys Leu Met Glu His Leu Tyr Thr Glu Lys Met Val Glu Asp Cys
385                 390                 395                 400
Glu His Arg Leu Leu Glu Leu Gln Tyr Phe Ile Ser Arg Asp Trp Lys
                405                 410                 415
Leu Asp Pro Val Leu Tyr Arg Lys Cys Gln Gly Asp Ala Ser Arg Leu
            420                 425                 430
Cys His Thr His Gly Trp Asn Glu Thr Ser Glu Phe Met Pro Gln Gly
        435                 440                 445
Ala Val Phe Ser Cys Leu Tyr Arg His Ala Tyr Arg Thr Glu Glu Gln
    450                 455                 460
Gly Arg Arg Leu Ser Arg Glu Cys Arg Ala Glu Val Gln Arg Ile Leu
465                 470                 475                 480
His Gln Arg Ala Met Asp Val Lys Leu Asp Pro Ala Leu Gln Asp Lys
                485                 490                 495
Cys Leu Ile Asp Leu Gly Lys Trp Cys Ser Glu Lys Thr Glu Thr Gly
            500                 505                 510
Gln Lys Leu Glu Cys Leu Gln Asp His Leu Asp Asp Leu Val Val Glu
        515                 520                 525
Cys Arg Asp Ile Val Gly Asn Leu Thr Glu Leu Glu Ser Glu Asp Ile
    530                 535                 540
Gln Ile Glu Ala Leu Leu Met Arg Ala Cys Glu Pro Ile Ile Gln Asn
545                 550                 555                 560
Phe Cys His Asp Val Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met
                565                 570                 575
Glu Cys Leu Ile Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys
            580                 585                 590
Ala Ile Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg
        595                 600                 605
Phe Ser Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu
    610                 615                 620
Cys Pro Asn Ile Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr
625                 630                 635                 640
Thr Val Arg Asn Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser
                645                 650                 655
Leu Lys Cys Arg Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu
            660                 665                 670
Asp Ile Arg Leu Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile
        675                 680                 685
Lys Asn Phe Cys Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu
    690                 695                 700
Cys Leu Lys Glu Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys
705                 710                 715                 720
Val Phe Lys Leu Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr
                725                 730                 735
Thr Leu Met Arg Val Cys Lys Gln Met Ile Lys Lys Phe Cys Pro Glu
            740                 745                 750
Ala Asp Ser Lys Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser
        755                 760                 765
Glu Leu Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile
    770                 775                 780
Thr Gln Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys
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785 790 795 800
Lys Ala Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys
805 810 815
Asp Asp Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg
820 825 830
Tyr Ala Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile
835 840 845
Ile Ile Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln
850 855 860
Leu His Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala
865 870 875 880
Ala Gln Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu
885 890 895
Leu Lys Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu
900 905 910
Lys Glu Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala
915 920 925
Cys Ala Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg
930 935 940
Gly Arg Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val
945 950 955 960
Arg Leu Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met
965 970 975
Trp Ser Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu
980 985 990
Ala Met Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val
995 1000 1005
Ile Ser Gly Ser Ile Cys Ile Leu Phe Leu Ile Gly Leu Met Cys Gly
1010 1015 1020
Arg Ile Thr Lys Arg Val Thr Arg Glu Leu Lys Asp Arg
1025 1030 1035

<210> 7
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Met Ala Ala Cys Gly Arg Val Arg Arg Met Phe Arg Leu Ser Ala Ala
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Leu His Leu Leu Leu Leu Phe Ala Ala Gly Gly Arg Asn Ser Pro Ala
20 25 30
Arg Ala Ser His Ser Gln Gly Gln Gly Pro Gly Ala Asn Phe Val Ser
35 40 45
Phe Val Gly Gln Ala Gly Gly Gly Gly Pro Ala Gly Gln Gln Leu Pro
50 55 60
Gln Leu Pro Gln Ser Ser Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln
65 70 75 80
Gln Gln Gln Gln Pro Gln Pro Pro Gln Pro Pro Phe Pro Ala Gly Gly
85 90 95
Pro Pro Arg Arg Gly Gly Ala Gly Ala Gly Gly Gly Trp Lys Leu Ala
100 105 110
Glu Glu Glu Ser Cys Arg Glu Asp Val Thr Arg Val Cys Pro Lys His
115 120 125
Thr Trp Ser Asn Asn Leu Ala Val Leu Glu Cys Leu Gln Asp Val Arg
130 135 140
Glu Pro Glu Asn Glu Ile Ser Ser Asp Cys Asn His Leu Leu Trp Asn

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145                 150                 155                 160
Tyr Lys Leu Asn Leu Thr Thr Asp Pro Lys Phe Glu Ser Val Ala Arg
                165                 170                 175
Glu Val Cys Lys Ser Thr Ile Thr Glu Ile Lys Glu Cys Ala Asp Glu
            180                 185                 190
Pro Val Gly Lys Gly Tyr Met Val Ser Cys Leu Val Asp His Arg Gly
        195                 200                 205
Asn Ile Thr Glu Tyr Gln Cys His Gln Tyr Ile Thr Lys Met Thr Ala
    210                 215                 220
Ile Ile Phe Ser Asp Tyr Arg Leu Ile Cys Gly Phe Met Asp Asp Cys
225                 230                 235                 240
Lys Asn Asp Ile Asn Ile Leu Lys Cys Gly Ser Ile Arg Leu Gly Glu
                245                 250                 255
Lys Asp Ala His Ser Gln Gly Glu Val Val Ser Cys Leu Glu Lys Gly
            260                 265                 270
Leu Val Lys Glu Ala Glu Glu Arg Glu Pro Lys Ile Gln Val Ser Glu
        275                 280                 285
Leu Cys Lys Lys Ala Ile Leu Arg Val Ala Glu Leu Ser Ser Asp Asp
    290                 295                 300
Phe His Leu Asp Arg His Leu Tyr Phe Ala Cys Arg Asp Asp Arg Glu
305                 310                 315                 320
Arg Phe Cys Glu Asn Thr Gln Ala Cys Glu Gly Arg Val Tyr Lys Cys
                325                 330                 335
Leu Phe Asn His Lys Phe Glu Glu Ser Met Ser Glu Lys Cys Arg Glu
            340                 345                 350
Ala Leu Thr Thr Arg Gln Lys Leu Ile Ala Gln Asp Tyr Lys Val Ser
        355                 360                 365
Tyr Ser Leu Ala Lys Ser Cys Lys Ser Asp Leu Lys Lys Tyr Arg Cys
    370                 375                 380
Asn Val Glu Asn Leu Pro Arg Ser Arg Glu Ala Arg Leu Ser Tyr Leu
385                 390                 395                 400
Leu Met Cys Leu Glu Ser Ala Val His Arg Gly Arg Gln Val Ser Ser
                405                 410                 415
Glu Cys Gln Gly Glu Met Leu Asp Tyr Arg Arg Met Leu Met Glu Asp
            420                 425                 430
Phe Ser Leu Ser Pro Glu Ile Ile Leu Ser Cys Arg Gly Glu Ile Glu
        435                 440                 445
His His Cys Ser Gly Leu His Arg Lys Gly Arg Thr Leu His Cys Leu
    450                 455                 460
Met Lys Val Val Arg Gly Glu Lys Cys Asn Leu Gly Met Asn Cys Gln
465                 470                 475                 480
Gln Ala Leu Gln Thr Leu Ile Gln Glu Thr Asp Pro Gly Ala Asp Tyr
                485                 490                 495
Arg Ile Asp Arg Ala Leu Asn Glu Ala Cys Glu Ser Val Ile Gln Thr
            500                 505                 510
Ala Cys Lys His Ile Arg Ser Gly Asp Pro Met Ile Ser Ser Cys Leu
        515                 520                 525
Met Glu His Leu Tyr Thr Glu Lys Met Val Glu Asp Cys Glu His Arg
    530                 535                 540
Leu Leu Glu Leu Gln Tyr Phe Ile Ser Arg Asp Trp Lys Leu Asp Pro
545                 550                 555                 560
Val Leu Tyr Arg Lys Cys Gln Gly Asp Ala Ser Arg Leu Cys His Thr
                565                 570                 575
His Gly Trp Asn Glu Thr Ser Glu Phe Met Pro Gln Gly Ala Val Phe
            580                 585                 590
Ser Cys Leu Tyr Arg Glu Ala Tyr Arg Thr Glu Glu Gln Gly Arg Arg
        595                 600                 605
Leu Ser Arg Glu Cys Arg Ala Glu Val Gln Arg Ile Leu His Gln Arg
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    610                 615                 620
Ala Met Asp Val Lys Leu Asp Pro Ala Leu Gln Asp Lys Cys Leu Ile
625                 630                 635                 640
Asp Leu Gly Lys Trp Cys Ser Glu Lys Thr Glu Thr Gly Gln Glu Leu
                645                 650                 655
Glu Cys Leu Gln Asp His Leu Asp Asp Leu Val Val Glu Cys Arg Asp
            660                 665                 670
Ile Val Gly Asn Leu Thr Glu Leu Glu Ser Glu Asp Ile Gln Ile Glu
        675                 680                 685
Ala Leu Leu Met Arg Ala Cys Glu Pro Ile Ile Gln Thr Phe Cys His
    690                 695                 700
Asp Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met Glu Cys Leu Ile
705                 710                 715                 720
Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys Ala Ile Gly Val
                725                 730                 735
Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg Phe Ser Tyr Lys
            740                 745                 750
Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu Cys Pro Asn Ile
        755                 760                 765
Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr Thr Val Arg Asn
    770                 775                 780
Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser Leu Lys Cys Arg
785                 790                 795                 800
Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu Asp Ile Arg Leu
                805                 810                 815
Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile Lys Asn Phe Cys
            820                 825                 830
Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu Cys Leu Lys Glu
        835                 840                 845
Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys Val Phe Lys Leu
    850                 855                 860
Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr Thr Leu Met Arg
865                 870                 875                 880
Val Cys Lys Gln Met Ile Lys Arg Phe Cys Pro Glu Ala Asp Ser Lys
                885                 890                 895
Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser Glu Leu Met Asp
            900                 905                 910
Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile Thr Gln Asn Thr
        915                 920                 925
Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys Lys Ala Asp Ile
    930                 935                 940
Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys Asp Asp Ser Glu
945                 950                 955                 960
Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg Tyr Ala Asp Gln
                965                 970                 975
Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile Ile Ile Gln Glu
            980                 985                 990
Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln Leu His Cys Ser
        995                 1000                1005
Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala Ala Gln Glu Gln
    1010                1015                1020
Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu Leu Lys Ile Lys
1025                1030                1035                1040
Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu Lys Glu Ser Lys
                1045                1050                1055
Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala Cys Ala Leu Asp
            1060                1065                1070
Ile Lys His His Cys Ala Ala Leu Thr Pro Gly Arg Gly Arg Gln Met
```

```
        1075                1080                1085
Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val Arg Leu Gln Pro
    1090                1095                1100
Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met Trp Ser Tyr Ala
1105                1110                1115                1120
Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu Ala Met Gln Val
                1125                1130                1135
Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val Ile Ser Gly Ser
            1140                1145                1150
Ile Cys Ile Leu Phe Leu Ile Gly Leu Met Cys Gly Arg Ile Thr Lys
        1155                1160                1165
Arg Val Thr Arg Glu Leu Lys Asp Arg
    1170                1175


<210> 8
<211> 1179
<212> PRT
<213> Homo sapiens

<400> 8
Met Ala Ala Cys Gly Arg Val Arg Arg Met Phe Arg Leu Ser Ala Ala
 1               5                  10                  15
Leu His Leu Leu Leu Leu Phe Ala Ala Gly Ala Glu Lys Leu Pro Gly
            20                  25                  30
His Gly Val His Ser Gln Gly Gln Gly Pro Gly Ala Asn Phe Val Ser
        35                  40                  45
Phe Val Gly Gln Ala Gly Gly Gly Gly Pro Ala Gly Gln Gln Leu Pro
    50                  55                  60
Gln Leu Leu Gln Ser Ser Gln Leu Gln Gln Gln Gln Gln Gln Gln Gln
65                  70                  75                  80
Gln Gln Gln Gln Leu Gln Pro Pro Gln Pro Pro Phe Pro Ala Gly Gly
                85                  90                  95
Pro Pro Ala Arg Arg Gly Gly Ala Gly Ala Gly Gly Gly Trp Lys Leu
            100                 105                 110
Ala Glu Glu Glu Ser Cys Arg Glu Asp Val Thr Arg Val Cys Pro Lys
        115                 120                 125
His Thr Trp Ser Asn Asn Leu Ala Val Leu Glu Cys Leu Gln Asp Val
    130                 135                 140
Arg Glu Pro Glu Asn Glu Ile Ser Ser Asp Cys Asn His Leu Leu Trp
145                 150                 155                 160
Asn Tyr Lys Leu Asn Leu Thr Thr Asp Pro Lys Phe Glu Ser Val Ala
                165                 170                 175
Arg Glu Val Cys Lys Ser Thr Ile Thr Glu Ile Lys Glu Cys Ala Asp
            180                 185                 190
Glu Pro Val Gly Lys Gly Tyr Met Val Ser Cys Leu Val Asp His Arg
        195                 200                 205
Gly Asn Ile Thr Glu Tyr Gln Cys His Gln Tyr Ile Thr Lys Met Thr
    210                 215                 220
Ala Ile Ile Phe Ser Asp Tyr Arg Leu Ile Cys Gly Phe Met Asp Asp
225                 230                 235                 240
Cys Lys Asn Asp Ile Asn Ile Leu Lys Cys Gly Ser Ile Arg Leu Gly
                245                 250                 255
Glu Lys Asp Ala His Ser Gln Gly Glu Val Val Ser Cys Leu Glu Lys
            260                 265                 270
Gly Leu Val Lys Glu Ala Glu Glu Arg Glu Pro Lys Ile Gln Val Ser
        275                 280                 285
Glu Leu Cys Lys Lys Ala Ile Leu Arg Val Ala Glu Leu Ser Ser Asp
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    290                 295                 300
Asp Phe His Leu Asp Arg His Leu Tyr Phe Ala Cys Arg Asp Asp Arg
305                 310                 315                 320
Glu Arg Phe Cys Glu Asn Thr Gln Ala Arg Glu Gly Arg Val Tyr Lys
                325                 330                 335
Cys Leu Phe Asn His Lys Phe Glu Glu Ser Met Ser Glu Lys Cys Arg
            340                 345                 350
Glu Ala Leu Thr Thr Arg Gln Lys Leu Ile Ala Gln Asp Tyr Lys Val
        355                 360                 365
Ser Tyr Ser Leu Ala Lys Ser Cys Lys Ser Asp Leu Lys Lys Tyr Arg
    370                 375                 380
Cys Asn Val Glu Asn Leu Pro Arg Ser Arg Glu Ala Arg Leu Ser Tyr
385                 390                 395                 400
Leu Leu Met Cys Leu Glu Ser Ala Val His Arg Gly Arg Gln Val Ser
                405                 410                 415
Ser Glu Cys Gln Gly Glu Met Leu Asp Tyr Arg Arg Met Leu Met Glu
            420                 425                 430
Asp Phe Ser Leu Ser Pro Glu Ile Ile Leu Ser Cys Arg Gly Glu Ile
        435                 440                 445
Glu His His Cys Ser Gly Leu His Arg Lys Gly Arg Thr Leu His Cys
    450                 455                 460
Leu Met Lys Val Val Arg Gly Glu Lys Gly Asn Leu Gly Met Asn Cys
465                 470                 475                 480
Gln Gln Ala Leu Gln Thr Leu Ile Gln Glu Thr Asp Pro Gly Ala Asp
                485                 490                 495
Tyr Arg Ile Asp Arg Ala Leu Asn Glu Ala Cys Glu Ser Val Ile Gln
            500                 505                 510
Thr Ala Cys Lys His Ile Arg Ser Gly Asp Pro Met Ile Leu Ser Cys
        515                 520                 525
Leu Met Glu His Leu Tyr Thr Glu Lys Met Val Glu Asp Cys Glu His
    530                 535                 540
Arg Leu Leu Glu Leu Gln Tyr Phe Ile Ser Arg Asp Trp Lys Leu Asp
545                 550                 555                 560
Pro Val Leu Tyr Arg Lys Cys Gln Gly Asp Ala Ser Arg Leu Cys His
                565                 570                 575
Thr His Gly Trp Asn Glu Thr Ser Glu Phe Met Pro Gln Gly Ala Val
            580                 585                 590
Phe Ser Cys Leu Tyr Arg His Ala Tyr Arg Thr Glu Glu Gln Gly Arg
        595                 600                 605
Arg Leu Leu Asp Pro Ala Leu Gln Asp Lys Cys Leu Ile Asp Leu Gly
    610                 615                 620
Lys Trp Cys Ser Glu Lys Thr Glu Thr Gly Gln Glu Leu Glu Cys Leu
625                 630                 635                 640
Ser Arg Glu Cys Arg Ala Glu Val Gln Arg Ile Leu His Gln Arg Ala
                645                 650                 655
Met Asp Val Lys Gln Asp His Leu Asp Asp Leu Val Val Glu Cys Arg
            660                 665                 670
Asp Ile Val Gly Asn Leu Thr Glu Leu Glu Ser Glu Asp Ile Gln Ile
        675                 680                 685
Glu Ala Leu Leu Met Arg Ala Cys Glu Pro Ile Ile Gln Asn Phe Cys
    690                 695                 700
His Asp Val Ala Asp Asn Gln Ile Asp Ser Gly Asp Leu Met Glu Cys
705                 710                 715                 720
Leu Ile Gln Asn Lys His Gln Lys Asp Met Asn Glu Lys Cys Ala Ile
                725                 730                 735
Gly Val Thr His Phe Gln Leu Val Gln Met Lys Asp Phe Arg Phe Ser
            740                 745                 750
Tyr Lys Phe Lys Met Ala Cys Lys Glu Asp Val Leu Lys Leu Cys Pro
```

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        755                 760                 765
Asn Ile Lys Lys Lys Val Asp Val Val Ile Cys Leu Ser Thr Thr Val
    770                 775                 780
Arg Asn Asp Thr Leu Gln Glu Ala Lys Glu His Arg Val Ser Leu Lys
785                 790                 795                 800
Cys Arg Arg Gln Leu Arg Val Glu Glu Leu Glu Met Thr Glu Asp Ile
                805                 810                 815
Arg Leu Glu Pro Asp Leu Tyr Glu Ala Cys Lys Ser Asp Ile Lys Asn
            820                 825                 830
Phe Cys Ser Ala Val Gln Tyr Gly Asn Ala Gln Ile Ile Glu Cys Leu
        835                 840                 845
Lys Glu Asn Lys Lys Gln Leu Ser Thr Arg Cys His Gln Lys Val Phe
    850                 855                 860
Lys Leu Gln Glu Thr Glu Met Met Asp Pro Glu Leu Asp Tyr Thr Leu
865                 870                 875                 880
Met Arg Val Cys Lys Gln Met Ile Lys Arg Phe Cys Pro Glu Ala Asp
                885                 890                 895
Ser Lys Thr Met Leu Gln Cys Leu Lys Gln Asn Lys Asn Ser Glu Leu
            900                 905                 910
Met Asp Pro Lys Cys Lys Gln Met Ile Thr Lys Arg Gln Ile Thr Gln
        915                 920                 925
Asn Thr Asp Tyr Arg Leu Asn Pro Met Leu Arg Lys Ala Cys Lys Ala
    930                 935                 940
Asp Ile Pro Lys Phe Cys His Gly Ile Leu Thr Lys Ala Lys Asp Asp
945                 950                 955                 960
Ser Glu Leu Glu Gly Gln Val Ile Ser Cys Leu Lys Leu Arg Tyr Ala
                965                 970                 975
Asp Gln Arg Leu Ser Ser Asp Cys Glu Asp Gln Ile Arg Ile Ile Ile
            980                 985                 990
Gln Glu Ser Ala Leu Asp Tyr Arg Leu Asp Pro Gln Leu Gln Leu His
        995                 1000                1005
Cys Ser Asp Glu Ile Ser Ser Leu Cys Ala Glu Glu Ala Ala Ala Gln
    1010                1015                1020
Glu Gln Thr Gly Gln Val Glu Glu Cys Leu Lys Val Asn Leu Leu Lys
1025                1030                1035                1040
Ile Lys Thr Glu Leu Cys Lys Lys Glu Val Leu Asn Met Leu Lys Glu
                1045                1050                1055
Ser Lys Ala Asp Ile Phe Val Asp Pro Val Leu His Thr Ala Cys Ala
            1060                1065                1070
Leu Asp Ile Lys His His Cys Ala Ala Ile Thr Pro Gly Arg Gly Arg
        1075                1080                1085
Gln Met Ser Cys Leu Met Glu Ala Leu Glu Asp Lys Arg Val Arg Leu
    1090                1095                1100
Gln Pro Glu Cys Lys Lys Arg Leu Asn Asp Arg Ile Glu Met Trp Ser
1105                1110                1115                1120
Tyr Ala Ala Lys Val Ala Pro Ala Asp Gly Phe Ser Asp Leu Ala Met
                1125                1130                1135
Gln Val Met Thr Ser Pro Ser Lys Asn Tyr Ile Leu Ser Val Ile Ser
            1140                1145                1150
Gly Ser Ile Cys Ile Leu Phe Leu Ile Gly Leu Met Cys Gly Arg Ile
        1155                1160                1165
Thr Lys Arg Val Thr Arg Glu Leu Lys Asp Arg
    1170                1175
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<210> 9
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer

<400> 9
gcttggagaa aggcctggtg aa 22

<210> 10
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 10
tggcacttgc ggtacaggac ag 22

<210> 11
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 11
gcagcttcag cagcaacagc a 21

<210> 12
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 12
cagctcagcc acccggagaa tg 22

<210> 13
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 13
gcttggagaa aggcctggtg aa 22

<210> 14
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Primer

<400> 14
tggcacttgc ggtacaggac ag 22

<210> 15
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 15
gaacaccgtc tcttagagct gc 22

<210> 16
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 16
gcttcctgca gagtgtcatt gc 22

<210> 17
<211> 22
<212> DNA
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<220>
<223> Primer

<400> 17
ggaggacgtg ttgaagcttt gc 22

<210> 18
<211> 22
<212> DNA
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<220>
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<400> 18
ccagggcaca agcagtatga ag 22

<210> 19
<211> 22
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<220>
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<400> 19

caacagcaga caggtcaggt gg 22

<210> 20
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<220>
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<400> 20
ccggaagttc tgttggtatg ag 22

<210> 21
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<220>
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<400> 21
atttaaccct cactaaaggg 20

<210> 22
<211> 22
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<400> 22
gtaatacgac tcactatagg gc 22

<210> 23
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<220>
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<400> 23
ccggaagttc tgttggtatg ag 22

<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 24
gtggaaggac tcatgaccac agtc 24

<210> 25

<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 25
catgtgggcc atgaggtcca ccac 24

<210> 26
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<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(312)
<223>

<400> 26
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Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser
1 5 10 15

tat ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg 96
Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
20 25 30

gtg gca gtt ata tca tat gat gga agt aat aaa tac tat gca gac tcc 144
Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
35 40 45

gtg aag ggc cga ttc acc atc tcc aga gac aat tcc aag aac acg ctg 192
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu
50 55 60

tat ctg caa atg aac agc ctg aga gct gag gac acg gct gtg tat tac 240
Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
65 70 75 80

tgt gcg agg tcg act acg agg tct tat cct cta tac ggt atg gac gtt 288
Cys Ala Arg Ser Thr Thr Arg Ser Tyr Pro Leu Tyr Gly Met Asp Val
85 90 95

tgg ggc caa ggg aac cct gtc acc 312
Trp Gly Gln Gly Asn Pro Val Thr
100

<210> 27
<211> 399
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(399)

<223>

<400> 27

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gtg acc tcc tat gtg ctg act cag cca ccc tcg gtg tca gtg gcc cca   48
Val Thr Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro
 1               5                  10                  15

gga cag acg gcc agt att acc tgt ggg gga aat aac att gga agt aaa   96
Gly Gln Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys
            20                  25                  30

agt gtg cac tgg tac cat cag aag cca ggc cag gcc cct gtg ctg gtc   144
Ser Val His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val
        35                  40                  45

gtc tat gat gat agc gac cgg ccc tca ggg atc cct gag cga ttc tct   192
Val Tyr Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser
    50                  55                  60

ggc tcc aac tct ggg aac acg gcc acc ctg acc atc acc agg gtc gaa   240
Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Thr Arg Val Glu
65                  70                  75                  80

gcc ggg gat gag gcc gac tat tac tgt cag gtg tgg gat agt agt agt   288
Ala Gly Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser
                85                  90                  95

gat ctc aat tgg gtg ttc ggc gga agg acc caa gct gac cgt cct acg   336
Asp Leu Asn Trp Val Phe Gly Gly Arg Thr Gln Ala Asp Arg Pro Thr
            100                 105                 110

tca gcc caa ggc tgc ccc tcc ggt cac tct gtt ccc cgc ccc cct ctg   384
Ser Ala Gln Gly Cys Pro Ser Gly His Ser Val Pro Arg Pro Pro Leu
        115                 120                 125

aag agc ttc aag ctt                                              399
Lys Ser Phe Lys Leu
    130
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<210> 28
<211> 104
<212> PRT
<213> Homo sapiens

<400> 28

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Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser
 1               5                  10                  15
Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
            20                  25                  30
Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser
        35                  40                  45
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu
    50                  55                  60
Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
65                  70                  75                  80
Cys Ala Arg Ser Thr Thr Arg Ser Tyr Pro Leu Tyr Gly Met Asp Val
                85                  90                  95
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Trp Gly Gln Gly Asn Pro Val Thr
100

<210> 29
<211> 133
<212> PRT
<213> Homo sapiens

<400> 29
Val Thr Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro
1 5 10 15
Gly Gln Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys
20 25 30
Ser Val His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val
35 40 45
Val Tyr Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser
50 55 60
Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Thr Arg Val Glu
65 70 75 80
Ala Gly Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser
85 90 95
Asp Leu Asn Trp Val Phe Gly Gly Arg Thr Gln Ala Asp Arg Pro Thr
100 105 110
Ser Ala Gln Gly Cys Pro Ser Gly His Ser Val Pro Arg Pro Pro Leu
115 120 125
Lys Ser Phe Lys Leu
130

<210> 30
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 30
caagagcaga caggtcaggt gg 22